

Message Text

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PAGE 01 STATE 099160
ORIGIN EB-07

INFO OCT-01 CIAE-00 COME-00 DODE-00 NSAE-00 USIA-06
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FM SECSTATE WASHDC
TO USMISSION OECD PARIS PRIORITY

C O N F I D E N T I A L STATE 099160

EXCON

E.O. 11652: XGDS-1

TAGS: ESTC, COCOM, GE, GW, UR

SUBJECT: GERMAN CRYSTAL GROWING MACHINES TO USSR AND GDR--
IL 1355

REF: A) COCOM DOC (77) 129, B) SCOM DOC (77) 505

1. EKZ 1600/7000 CRYSTAL GROWING MACHINES HAVE BEEN REEXAMINED BY US DEFENSE DEPARTMENT TECHNICIANS AS RESULT OF GERMAN SUBMISSION OF REF CASES. THESE TECHNICIANS NOW STATE THAT THE EKZ 1600/7000 CZOCHRALSKI PULLER CAN BE USED FOR THE BULK GROWTH OF GALLIUM--ARSENIDE BY THE LIQUID ENCAPSULATION TECHNIQUE. THE VAPOR PRESSURE OF ARSENIC AT THE MELTING POINT OF GALLIUM-ARSENIDE (1,240 DEGREES C) IS 0.9 ATMOSPHERE ABSOLUTE, WHICH IS LOWER THAN THE PULLER'S CAPABILITY. THE COLD WALL CONSTRUCTION OF SUBJECT PULLER WILL NOT PERMIT THE STANDARD CZOCHRALSKI TECHNIQUE DUE TO CONDENSATION AND LOSS OF ARSENIC ON THE
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WALL DURING THE GROWTH PROCESS. HOWEVER, BY RESORTING TO THE LIQUID ENCAPSULATION TECHNIQUE, A PRESSURE OF ONLY 1/3 ATMOSPHERE ABSOLUTE IN THE GROWTH CHAMBER WILL SUFFICE TO CONTAIN ARSENIC IN THE MELT COVERED BY BORON OXIDE AND PERMIT THE BULK GROWTH OF GALLIUM-ARSENIDE.

2. SINCE THE GERMANS STATE THAT PRODUCTION OF GALLIUM

PHOSPHIDES AND GALLIUM ARSENIDES IS NOT POSSIBLE WITH THIS
MACHINE, WE WOULD APPRECIATE COMMENTS OF THE GERMAN
EXPERTS ON THE STATEMENTS IN PARA. 1 ABOVE. IN MEANTIME,
USDEL SHOULD MAINTAIN THE US RESERVE ON BOTH CASES.
VANCE

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Message Attributes

Automatic Decaptioning: X
Capture Date: 01-Jan-1994 12:00:00 am
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Control Number: n/a
Copy: SINGLE
Sent Date: 02-May-1977 12:00:00 am
Decaption Date: 01-Jan-1960 12:00:00 am
Decaption Note:
Disposition Action: RELEASED
Disposition Approved on Date:
Disposition Case Number: n/a
Disposition Comment: 25 YEAR REVIEW
Disposition Date: 22 May 2009
Disposition Event:
Disposition History: n/a
Disposition Reason:
Disposition Remarks:
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Handling Restrictions: n/a
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ISecure: 1
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Review Release Date: n/a
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